

Remarks

Applicants thank Examiner Noland for the careful examination of their application and the clear explanation of the rejections and the conditional allowance of claims 5, 6, 8, and 9. Applicants respectfully respond to the Office action as follows:

- I. The 103(a) rejection against claim 1 is improper because the cited McAndrew reference and The Kai reference both fail to disclose at least one element of limitation in claim 1.

Claim 1 describes a fabrication method that comprises the steps of:

1. monitoring the exhaust of a process chamber; and
2. automatically sampling the exhaust when a predetermined event occurs.

The Office action cites the abstract and the passage in the McAndrew reference col. 11, l. 66 to col. 12, l. 20 as disclosing sampling of the exhaust from an IC manufacturing process and the control of such systems being achieved in response to alarm signals.¹ There is no disclosure in the abstract of “automatically sampling the exhaust when a predetermined event occurs.” The passage discloses an alarm system that can be activated upon the happening of a certain event, such as the detected absorption or gas concentration exceeding a predefined limit.² Claim 1 discloses sampling the exhaust when a predetermined event occurs while the McAndrew reference discloses an alarm being activated when the detected gas concentration exceeds a predefined limit.

The Kai reference discloses a method with which the cleanliness of equipment may be measured. The method includes detecting particles in sample air passing through a detection cell generating scattered light by which the diameters of particles and the number of particles in sample air may be counted.³ There is no disclosure of “automatically sampling the exhaust when a predetermined event occurs.”

Because both references fail to disclose at least one element in claim 1, the Office action fails to establish *prima facie* obviousness. Therefore, claim 1 stands patentable over the references.

- II. The 103(a) rejections against claims 2-4 are improper because claims 2-4 depend on patentable claim 1 with additional limitations. In particular, claim 2 further limits the monitoring step; claim 3 further limits sampling; claim 4 further limits the event. Therefore, claims 2-4 stand patentable.

¹ See, Office action, p. 3, ll. 3-6.

² See, U.S. 5,963,335, col. 11, l. 67 – col. 12, l. 3.

³ See, JP63089987, Constitution.

- III. The 103(a) rejection against claim 7 is improper because the cited McAndrew reference and The Kai reference both fail to disclose at least one element of limitation in claim 7.

Claim 7 describes a fabrication method that comprises the steps of:

1. monitoring at least one signal of a process chamber; and
2. sampling the exhaust from the process chamber when a predetermined event occurs.

As set forth in Section I, the Office action cites the abstract and the passage in the McAndrew reference col. 11, l. 66 to col. 12, l. 20 as disclosing sampling of the exhaust from an IC manufacturing process and the control of such systems being achieved in response to alarm signals.⁴ As set forth in Section I, there is no disclosure in the abstract of “sampling the exhaust from the process chamber when a predetermined event occurs” as required in claim 7. The passage in the McAndrew reference discloses an alarm system that can be activated upon the happening of a certain event, such as the detected absorption or gas concentration exceeding a predefined limit.⁵ Claim 7 discloses sampling the exhaust when a predetermined event occurs while the McAndrew reference discloses an alarm being activated when the detected gas concentration exceeds a predefined limit.

The Kai reference discloses a method with which the cleanliness of equipment may be measured. The method includes detecting particles in sample air passing through a detection cell generating scattered light by which the diameters of particles and the number of particles in sample air may be counted.⁶ There is no disclosure of “sampling the exhaust from the process chamber when a predetermined event occurs” as required in claim 7.

Because both references fail to disclose at least one element in claim 7, the Office action fails to establish prima facie obviousness. Therefore, claim 7 stands patentable over the references.

- IV. The 103(a) rejections against 8-10 are improper. Since Examiner Noland conditionally allowed claims 8 and 9, the following argument applies to claim 10 only. Claim 10 is allowable because it depends on a patentable claim 7 with additional limitation on the predetermined event.
- V. The 103(a) rejection against claim 14 is improper because the cited reference fail to disclose at least one element of limitation in claim 14.

⁴ See, Office action, p. 3, ll. 3-6.

⁵ See, U.S. 5,963,336, col. 11, l. 67 – col. 12, l. 3.

⁶ See, JP63089987, Constitution.

Claim 14 describes a wafer processing system that comprises the following elements:

1. a chamber with an exhaust;
2. a particle monitor located in the exhaust and the particle monitor is so connected as to cause a particle sampler to gather samples from the exhaust.

As set forth in Sections I and III, the Office action cites the abstract and the passage in the McAndrew reference col. 11, l. 66 to col. 12, l. 20 as disclosing sampling of the exhaust from an IC manufacturing process and the control of such systems being achieved in response to alarm signals.⁷ As set forth in Sections I and III, there is no disclosure in the abstract of “the particle monitor is connected to cause a particle sampler to gather samples form the exhaust” as required in claim 14. The passage in the McAndrew reference discloses an alarm system that can be activated upon the happening of a certain event, such as the detected absorption or gas concentration exceeding a predefined limit.⁸ Claim 14 discloses that the sampling of the exhaust being caused by the connection of the sampler to the monitor, i.e., the monitoring causes the sampling. The McAndrew reference discloses an alarm being activated when the detected gas concentration exceeds a predefined limit, i.e., the detecting of gas concentration activates the alarm.

The Kai reference discloses a method with which the cleanliness of equipment may be measured. The method includes detecting particles in sample air passing through a detection cell generating scattered light by which the diameters of particles and the number of particles in sample air may be counted.⁹ There is no disclosure of “the particle monitor is connected to cause a particle sampler to gather samples form the exhaust” as required in claim 14.

Because both references fail to disclose at least one element in claim 14, the Office action fails to establish prima facie obviousness. Therefore, claim 14 stands patentable over the references.

- VI. The 103(a) rejections against claims 15-18 are improper because claims 15-18 depend on patentable claim 14 with additional limitations. In particular, claims 15, 16, and 17 further limit the configuration, the operation, and the composition of the sampler; and claim 18 further limits the condition of the monitor causing the sampler to gather samples.

In conclusion, the references fail to disclose at least one element of limitation in each of the independent claims 1, 7, and 14 so prima facie obviousness can not be established. The dependent claims

⁷ See, Office action, p. 3, ll. 3-6.

⁸ See, U.S. 5,963,336, col. 11, l. 67 – col. 12, l. 3.

⁹ See, JP63089987, Constitution.

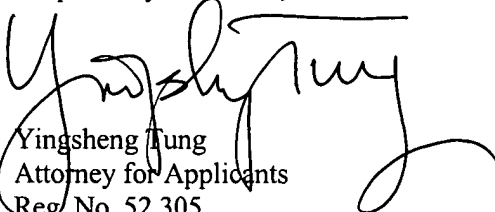
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depend on patentable claims directly or indirectly with additional limitations. Therefore the dependent claims are patentable over the references.

Applicants respectfully submit that the application is in allowable form and the claims distinguish over the cited reference. Applicants respectfully request that the application be further examined and the claims pass for allowance.

Respectfully submitted,



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